

## REMARKS

Claims 1-29 and 103 are pending in this application. In a May 18, 2006 Office Action, the Examiner lodged the following non-final rejections: a) anticipation of claims 1-4, 8, 13-27 and 103 by U.S. Pat. No. 6,029,195 (“Herz”); b) obviousness of claims 5-7 over Herz in view of U.S. Pat. No. 6,412,021 (“Bieganski”); c) obviousness of claims 9-12 over Herz in view of U.S. Pat. No. 6,438,579 (“Hosken”); and obviousness of claims 28-29 over Herz in view of U.S. Pat. No. 6,782,307 (“Wilmott”).

Applicants respectfully disagree with the Examiner’s conclusions regard Herz and the other cited references, and will demonstrate below that the rejections cannot stand for a variety of reasons. As to conclusions or assertions not specifically addressed below, and in prior Office Actions, Applicants rely on the holding in cases such as *Salazar v. Procter & Gamble Co.*, 414 F.3d 1342 (Fed. Cir. 2005) and *3M Innovative Props. Co. v. Avery Dennison Corp.*, 350 F.3d 1365 (Fed. Cir. 2003).

Minor amendments are made to claims 1 and 103 for purposes of clarity, reciting limitations that were implicitly stated before. No new matter is added.

### **Herz Is Fundamentally Different From Applicants’ Method and Medium**

All of the Examiner’s rejections rely on the alleged teachings of Herz. But the subject matter defined by Applicants’ claims is fundamentally different than the system disclosed in Herz.

Herz discloses a system for identifying desirable target objects in an electronic media environment. The system does this by first “automatically construct[ing] both a target profile for each target object in the electronic media ... as well as a ‘target profile interest summary’ for each user” (Abstract; Col. 4, lines 55-58; Col. 5, lines 6-14). “Target objects” are those “object[s] available for access by the user” in the “electronic media environment” (Abstract; Col. 4, lines 49-51). “Target profiles” represent the “target object’s attributes” (Col. 4, lines 51-53; Col. 6, lines 43-58). And a “target profile interest summary” represents a “user’s interest level in various types of target objects” in the electronic media environment; or in other words, consists of “a summary of digital profiles of target objects that a user likes and/or dislikes” (Abstract; Col. 4, lines 55-58; Col. 5, lines 6-14). After the system automatically constructs the target profiles for each target object and the target profile interest

summary for the user, the “system then evaluates the target profiles against the users’ target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user” (Abstract; Col. 1, lines 17-31; Col. 5, lines 6-17). In some embodiments, Herz applies an algorithm to the *target objects* so that they are grouped into clusters having similar attributes before evaluating the target profiles against a user’s target profile *interest* summary (Col. 23, line 60-Col. 26, line 10).

Applicants’ claims, on the other hand, generate individualized product recommendations by assessing the likelihoods that certain products, *if used in connection with a target substrate*, will address a need or want *provided by a consumer* (Claims 1 and 103). And the way in which Applicants’ claims assess those likelihoods is by *classifying the consumer* in a population of substantially similar persons who *used products in connection with substantially similar substrates* in the past, and determining likelihoods, *based on the classification and the need or want* to be addressed specified by the consumer, *of how* those and other *products in the category will address the consumer’s need or want if used in connection with the target substrate* (Id.).

The “user” in Herz corresponds to the “consumer” in Applicants’ claims, and the “target objects” in Herz correspond to the “products” in Applicants’ claims. Hence, the system in Herz and Applicants’ claims represent fundamentally different subject matter. *Nothing* in Herz corresponds to the “target substrate” in Applicants’ claims, *nothing* in Herz corresponds to the consumer providing a need or want to be addressed by products when used in connection with the target substrate, *nothing* in Herz corresponds to classifying the consumer in a population of substantially similar persons who used products in the past, and *nothing* in Herz corresponds to determining likelihoods, based on the classification and the need or want specified by the consumer, of how products in a product category would perform if used in connection with the consumer-designated target substrate. Herz simply does not disclose or contemplate (i) systems or methods of recommending target objects (products) to a user (consumer) for use in connection with a thing (target substrate) (ii) in order to satisfy a need or want of the user (consumer) regarding the thing (target substrate) (iii) based on the past performance of those objects (products) when they were used in connection with things (substantially similar target substrates) (iv) by substantially similar users (consumers).

Herz only contemplates, and only teaches, systems where objects' attributes (target profiles) and a user's *subjective interest level* in various types of target objects (target profile interest summary) are automatically compiled and compared to each other to see which target objects the user is most likely to have a *subjective interest in* (see, e.g., Col. 18, lines 10-13: "A filtering system is a device that can search through many target objects and estimate a given user's interest in each target object , so as to identify those that are of greatest interest to the user"). Herz completely fails to address or provide any teaching of recommending target objects to its users for use in connection with a target substrate based on the past *performance* of target objects in connection with substantially similar substrates by substantially similar users.

The critical shortcomings in systems like Herz (and Applicants say "like" because Herz does not even contemplate recommending target objects for use by a consumer with a target substrate based on the past performance of products), which are solved by the subject matter in Applicants' claims, are set forth in the Problem Summary section of Applicants' specification:

[P]resent recommendation systems have significant shortcomings. For instance, many if not most of the products to be considered for a particular consumer may not have been used and rated by many other consumers thereby handicapping collaborative filtering based systems. Also, consumers often have great difficulty in knowing or determining whether some, all, or none of their needs are being met by a particular product he or she may be using. This is particularly true where the need being addressed by a product is characterized by an incremental response. Moreover, while existing systems may be helpful in some categories of products they are inappropriate where performance of the products being recommended is complex or even unknown. Placing a high value on the ratings patterns of other consumers, even though similar in a social-statistical sense, fails to address the likelihood that the consumers may have disparate underlying conditions and problems to be addressed by a product, and that the condition or problem being treated by the product may respond quite differently. In many categories the performance of

products cannot be reliably predicted based on ratings patterns of other similar users, promises by the manufacturers thereof, or an examination of the ingredients or makeup of the products.

Accordingly, a need exists in the art for an individualized product recommendation system that does not rely primarily on consumer selection patterns but rather on product performance, optimized segmentation bases, and/or performance-based learning to render highly accurate product recommendations.

(Specification at paragraphs 29-30).

### **Herz Does Not Anticipate Claims 1 and 103**

Applicants will now demonstrate why particular assertions by the Examiner regarding Herz are at odds with its actual disclosure and teachings. Herz fails to anticipate claims 1 and 103 for at least these reasons.

***Herz Fails To Teach Or Disclose “receiving a first set of data from a consumer,” “receiving a first set of data [] regarding a substrate,” and “receiving a first set of data [] that includes a requirement to be addressed by a product”***

Claims 1 and 103 recite “receiving a first set of data from a consumer regarding a target substrate that includes a requirement to be addressed by a product.” And the Examiner has asserted that Herz meets these limitations by teaching the use of “target profiles” (Office Action at p. 3)(“Herz discloses [] *receiving a first set of data from a consumer* regarding a target *substrate* that includes a requirement to be addressed by a product (target profile col. 4, lines 49-54)”). But there are at least three problems with this assertion – the target profiles in Herz are *not* received from a user, the target profiles in Herz do *not* include a requirement (i.e., a need or want) to be addressed by an object (product), and the target profiles in Herz do *not* contain information regarding a substrate of interest to the user (target substrate).

Regarding the first point, the target profiles in Herz are not provided by the user, they are automatically created *by the system* in Herz (“The *system* [] of the present invention *automatically constructs* [] a *target profile* for each target object in the electronic media” Col. 5, lines 6-9). Thus, Herz fails to teach or disclose “receiving a first set of data from a consumer” as recited in claims 1 and 103.

Regarding the second point, the target profiles in Herz do not include a requirement to be addressed by its target objects, the target profiles only contain attributes of the target objects assigned by the system itself (“a digitally represented profile indicating [a] target object’s attributes is termed a ‘target profile’” Col. 4, lines 49-54). Thus, Herz fails to teach or disclose “receiving a first set of data from a consumer [] that includes a requirement to be addressed by a product” as recited in claims 1 and 103.

Regarding the final point, the target substrate in Applicants’ claims is separate and distinct from the products, and the target profiles in Herz do not contain information regarding items separate and distinct from the target objects such as a substrate, the target profiles only contain attributes of the target objects themselves (“a digitally represented profile indicating [a] target object’s attributes is termed a ‘target profile’” Col. 4, lines 49-54). This is not surprising given that Herz fails to teach or disclose anything about recommending target objects to a user for use in connection with a target substrate, let alone recommending target objects for use with a target substrate in order to meet a requirement specified by the user as an input (see Herz Is Fundamentally Different From Applicants’ Method and Medium above).

Thus, Herz fails to teach or disclose “receiving a first set of data from a consumer,” “receiving a first set of data [] regarding a substrate,” and “receiving a first set of data [] that includes a requirement to be addressed by a product.”

***Herz Fails To Teach Or Disclose “classifying the consumer [] in a population of consumers who previously used a product in the product category and who are substantially similar to the consumer”***

Claims 1 and 103 recite “classifying the consumer, based on the inputs, in a population of consumers who previously a product in the product category and who are substantially similar to the consumer.” And the Examiner has asserted that Herz meets these limitations are met by the teachings of Herz at “col. 4, lines 64-67; col. 5, lines 30-36; col. 6, lines 54-58; col. 12, lines 26-31; [and] col. 24, lines 42-67” (Office Action at p.3). But none of these citations teach the “classifying the consumer” limitation recited in Applicants’ claims.

At col. 4, lines 64-67, Herz simply states that “a collection of target objects with similar profiles, is termed a ‘cluster,’” and that “an aggregate profile formed by averaging the

attributes of all target objects in a cluster, [is] termed a 'cluster profile.'" This passage only teaches grouping similar *target objects* together for the purpose of assessing whether to recommend particular target objects to the user, not classifying the *user* (consumer) in a population of *users* (consumers) who are substantially similar to the *user* (consumer) for the purpose of assessing whether to recommend particular target objects to the user (consumer)(see claims 1 and 103). Nor does this passage teach classifying the user (consumer) in a population of users (consumers) *who previously used a target object* (product) in a target object (product) category for the purpose of assessing whether to recommend particular target objects to the user (consumer)(see claims 1 and 103).

The same is true of the passages cited by the Examiner at col. 5, lines 30-36; col. 12, lines 26-31; and col. 24, lines 42-67 -- none teach classifying the *user of the system* in a population of *other users who previously used a target object in a category* of target objects and *who are substantially similar to the user* for the purpose of assessing whether to recommend particular target objects to the user (col. 5, lines 30-36: "*target objects can be grouped* into clusters based on their similarity to each other;" col. 11, line 66-col. 12, line 31: "in a domain where the *user is an advertiser* and the *target objects are potential customers*," the "system might store the following *attributes for each target object* (potential customer). ... As always, the notion is that similar consumers [i.e., *similar target objects*] buy similar products;" and col. 23, line 61-col. 24, line 67: "A method for defining the distance between any pair of *target objects* was disclosed above. Given this distance measure, it is simple to apply a standard clustering algorithm [] to *group the target objects* into a number of clusters, in such a way that *similar target objects tend to be grouped* in the same cluster. ... Any of these basic types of clustering might be used by the system: 1) Association-based clustering, in which [target] profiles contain only associative attributes, and thus distance [between target objects] is defined by associations. ... 2) Content-based clustering, in which [target] profiles contain only non-associative attributes. ... 3) Uniform hybrid method, in which [target] profiles may contain both associative and non-associative attributes. ... The distance [] between two profiles [] may be computed by the general similarity-measurement methods described earlier").

Thus, Herz fails to teach or disclose ““classifying the consumer [] in a population of consumers who previously used a product in the product category and who are substantially similar to the consumer.”

***Herz Fails To Teach Or Disclose “determining, based on the inputs and the classification of the consumer, a likelihood that the products in the product category will address the requirement [] when used in connection with the target substrate”***

Claims 1 and 103 recite “determining, based on the inputs and the classification of the consumer, a likelihood that the products in the product category will address the requirement [specified by the user] with a predefined level of success when used in connection with the target substrate.” And the Examiner has asserted that Herz meets these limitations are met by the teachings of Herz at “col. 5, lines 14-20; Figure 12; col. 6, lines 38-58; col. 7, lines 6-16; col. 7, lines 63-66” (Office Action at p.3). But none of these citations teach the “determining [] a likelihood” limitation in Applicants’ claims, which is explicitly tied to assessing the likelihood of addressing the requirement specified by the user when used in connection with the target substrate based on the classification of the consumer in a population of persons who previously used products in the product category in connection with substantially similar substrates.

For example, at col. 5, lines 14-20, Herz simply states that after the system automatically generates target profiles for the target objects and target profile interest summaries for the users, the “system then evaluates the target profiles against the users’ target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of *interest* to each user.” This passage teaches nothing about assessing the likelihood that target objects will address a requirement specified by the user when the target objects are used in connection with a target substrate.

Similarly, at col. 7, lines 6-16, Herz only states that a “second module uses interest feedback from users to construct a ‘target profile interest summary’ for each user, for example in the form of a ‘search profile set’ consisting of a plurality of search profiles, each of which corresponds to a single topic of high interest for the user,” and that the “system further includes a profile processing module which estimates each users’ target profile interest summaries, for example by comparing target profiles of these target objects against the search profiles in users’ search profile sets, and generates for each user a customized

rank-ordered listing of target objects most likely to be of interest to that user.” Again, this passage teaches nothing about assessing the likelihood that the target objects will address a requirement specified by the user when the target objects are used in connection with a target substrate. Nor do either of the foregoing passages teach anything about assessing the likelihood that a target object will address a requirement specified by the user when used in connection with a target substrate based on the classification of the user in a population of users who previously used target objects in a target object category in connection with substantially similar substrates.

The same holds true for the other portions of Herz cited by the Examiner in support of the assertion that Herz discloses the “determining [] a likelihood” limitation in Applicants’ claims – none of them teaches assessing the likelihood that target objects will address a requirement specified by the user when the target objects are used in connection with a target substrate based on past performance of the target objects when used in connection with substantially similar substrates by substantially similar users. They relate only to assessing the likelihood that the user will have a subjective interest in the particular target object based on past subject interest in that or like objects (Figure 12: “illustrates in flow diagram form the process for determination of likelihood of *interest* by a specific user in a selected in a selected target object” but discloses no step where the system assesses the likelihood of whether a selected target object will satisfy a requirement specified by the user when the selected target object is used in connection with a target substrate specified by the user; col. 6, lines 38-58: “the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past. The individual data that describe a target object and constitute the target object’s profile are herein termed ‘attributes.’ ... Attributes may include, but are not limited to, the following: (1) long pieces of text [], (2) short pieces of text [], (3) numeric measurements [], (4) associations with other types of objects []. Any of these attributes, but especially the numeric ones, may correlate with the quality of the target object”).

Accordingly, Herz fails to teach or disclose “determining, based on the inputs and the classification of the consumer, a likelihood that the products in the



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product category will address the requirement ☐ when used in connection with the target substrate.”

### **Other Pending Claims**

Because all of the other current claims in this application depend on claim 1, and the rejection of claim 1 cannot stand, none of the rejections of the other claims can stand either.

### **Summary**

Unlike Herz, the subject matter recited in Applicant's claims does not simply recommend products (or target objects) to a consumer (or user) because it determines there is a likelihood that the consumer (or user) will be subjectively interested in those products (or target objects) because they are similar to products (or target objects) the consumer or similar consumers (or user(s)) was or were subjectively interested in such products (or target objects) before. The subject matter defined by Applicants' claims recommends products to a consumer because it determines there is a certain likelihood that the products will address a requirement specified by the consumer when used in connection with a specified target substrate, and that likelihood is based on an analysis of how particular products actually *performed* when used in connection with substantially similar substrates by consumers who were substantially similar to, or the same as, the consumer him- or herself in the past.

The rejections, which are all based on Herz, therefore cannot stand. Applicants therefore request that the Examiner issue a notice allowing all of the pending claims.

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David L. Marcus  
Registration No. 46,897

Woodcock Washburn LLP  
One Liberty Place - 46th Floor  
Philadelphia PA 19103  
Telephone: (215) 568-3100  
Facsimile: (215) 568-3439